

AMENDMENTS TO THE CLAIMS

1-6. (Cancelled)

7. (Currently Amended) A channel communication method for a mobile station in a mobile communication system, comprising the steps of:

transmitting a channel assignment request to a base station, when ~~it is required to assign~~
an assignment of a new channel is required;

upon receipt of a message including an 4 bits ID of a secondary scrambling code from the base station, transmitting a response message to the base station;

generating a mask using the received ID of the secondary scrambling code;

generating a secondary scrambling code using the generated mask; and

descrambling a downlink channel signal with the generated secondary scrambling code.

8. (Currently Amended) The channel communication method as claimed in claim 7, wherein the scrambling code generating step comprises the steps of:

generating a masked sequence by operating a first sequence with ~~[[a]]~~ the mask;

generating a second scrambling code by operating the masked sequence with a second sequence;

outputting the generated scrambling code[[s]] as a real-component scrambling code[[s]]; and

delaying the generated scrambling code[[s]] to output an imaginary-component scrambling code[[s]].

9. (Currently Amended) A channel code communication method for a base station in a CDMA (Code Division Multiple Access) mobile communication system, comprising the steps of:

transmitting spread data to a mobile station using a primary scrambling code representative of an identification code provided to the base station over a common channel; and

transmitting to a mobile station an secondary scrambling code identifier (ID)~~ID of a secondary scrambling code~~ for ~~expanding a capacity of channels to be used by the mobile stations~~scrambling data channels, when there is an insufficient number of channels, which can be used with the primary scrambling code.

10. (Currently Amended) The channel code communication method as claimed in claim 9, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is comprised of 4 bits.

11. (Currently Amended) The channel code communication method as claimed in claim ~~9~~10, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is transmitted over ~~a~~the common control channel.

12. (Currently Amended) The channel code communication method as claimed in claim ~~9~~10, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is transmitted over a dedicated channel presently in service.

13. (Currently Amended) A channel code communication method for a mobile station in a CDMA communication system, comprising the steps of:

acquiring an ID of a primary scrambling code representative of an identification code provided to a base station during initial ~~sync~~synchronization setting;

receiving an secondary scrambling code identifier (ID)~~ID of a secondary scrambling code~~ from the base station;

generating the secondary scrambling code by combining the primary scrambling code ID~~ID of the primary scrambling code~~ and the secondary scrambling code ID~~ID of the secondary scrambling code~~; and

despreading a received data signal with the generated secondary scrambling code.

14. (Currently Amended) The channel code communication method as claimed in claim 13, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is comprised of 4 bits.

15. (Currently Amended) The channel code communication method as claimed in claim ~~14~~13, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is received over a common control channel.

16. (Currently Amended) The channel code communication method as claimed in claim ~~14~~13, wherein the secondary scrambling code ID~~ID of the secondary scrambling code~~ is received over a downlink dedicated channel presently in service.

17-23.(Canceled)

24. (New) A data transmission method in mobile communication system, the method comprising the steps of:

scrambling common channel signals including a secondary scrambling code identifier (ID) with a primary scrambling code being assigned to the base station;

scrambling data channel signals with the secondary scrambling code being associated with the primary scrambling code;

transmitting the scrambled channel signals to a mobile station;

identifying the base station by means of the primary scrambling code;

descrambling the common channel signals with the primary scrambling code; and

descrambling the data channel signals with the secondary scrambling code,

wherein the primary scrambling code and the secondary scrambling code are complex scrambling codes consisted of a real component scrambling code and an imaginary component scrambling code, and the mobile station generates the secondary scrambling code according to the secondary scrambling code ID with reference to the primary scrambling code.

25. (New) The method of claim 24, wherein the common channel is a primary common control physical channel (P-CCPCH).

26. (New) The method of claim 24, wherein the data channel is a dedicated physical channel (DPCH).

27. (New) The method of claim 24, wherein the secondary scrambling code ID consists of 4bits.

28. (New) The method of claim 24, wherein the ID of the secondary scrambling code is transmitted over a control channel associated the data channel presently in service.

29. (New) The method of claim 24, wherein the imaginary part scrambling code is generated by shifting the real part scrambling code by specific chip period.

30. (New) A mobile communication system for data transmission, comprising:
a base station including a scrambler for scrambling common channel signals including a secondary scrambling code identifier (ID) with a primary scrambling code being assigned to the base station and data channel signals with the secondary scrambling code being associated with the primary scrambling code, and a transmitter for transmitting the scrambled channel signals to a mobile station;

the mobile station including a searcher for identifying the base station by means of the primary scrambling code and a descrambler for descrambling the common channel signals with the primary scrambling code and the data channel signals with the secondary scrambling code,

wherein the primary scrambling code and the secondary scrambling code are complex scrambling codes consisted of a real scrambling code and an imaginary scrambling code, and the mobile station generates the secondary scrambling code according to the secondary scrambling code ID with reference to the primary scrambling code.

31. (New) The system of claim 30, wherein the common channel is a primary common control physical channel (P-CCPCH).

32. (New) The system of claim 30, wherein the data channel is a dedicated physical channel (DPCH).

33. (New) The system of claim 30, wherein the secondary scrambling code ID consists of 4bits.

34. (New) The system of claim 30, wherein the ID of the secondary scrambling code is transmitted over a control channel associated the data channel presently in service.

35. (New) The system of claim 30, wherein the imaginary part scrambling code is generated by shifting the real part scrambling code by specific chip period.